

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 2 of 20

CLAIM AMENDMENTS

A listing of an entire set of claims 1-38 is submitted herewith per 37 C.F.R. §1.121 to replace all prior versions, and listings, of claims in the application. This listing of claims 1-38 includes (1) amendments to claims 11, 22 and 29; and (2) an addition of new claims 31-38

1.-10. (Cancelled)

11. (Currently Amended) A device, comprising:
a first LED array having a first anti-parallel configuration;
an inverter operable to provide an alternating voltage; and
a first resonant impedance circuit including a first resonant inductor and a first resonant capacitor connected to said first LED array in a first series resonant, series loaded configuration having said first resonant inductor connected in series to said inverter, and said first resonant capacitor connected in series between said first resonant inductor and said first LED array,

wherein the series connection of said first resonant capacitor and said first LED array is exclusive to said first resonant capacitor and said first LED array,
and

wherein said first resonant impedance circuit directs a first flow of a first alternating current through said first LED array in response to the alternating voltage having a first polarity and directs a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity.

12. (Previously Presented) The device of claim 11, wherein said first LED array includes at least one of a LED pair, a LED string and a LED matrix.

July 27, 2004
Case No.: US010726 (7790/69)
Serial No : 10/037,490
Filed: December 28, 2001
Page 3 of 20

- 13 (Previously Presented) The device of claim 11,
further comprising a second LED array having a second anti-parallel
configuration;
wherein said first resonant impedance circuit further includes a second
resonant capacitor;
wherein said first resonant inductor and said second resonant capacitor are
connected to said second LED array in a second series resonant, series loaded
configuration having said first resonant inductor connected in series to said inverter,
and said second resonant capacitor connected in series between said first resonant
inductor and said second LED array; and
wherein said first resonant impedance circuit directs a third flow of a second
alternating current through said second LED array in response to the alternating
voltage having the first polarity and directs a fourth flow of the second alternating
current through said second LED array in response to the alternating voltage having
the second polarity.
14. (Previously Presented) The device of claim 11, further comprising:
a second LED array having a second anti-parallel configuration; and
a second resonant impedance circuit including a second resonant inductor and
a second resonant capacitor connected to said second LED array in a second series
resonant, series loaded configuration having said second resonant inductor connected
in series to said inverter, and said second resonant capacitor connected in series
between said second resonant inductor and said second LED array,
wherein said second resonant impedance circuit directs a third flow of
a second alternating current through said second LED array in response to the
alternating voltage having the first polarity and directs a fourth flow of the second
alternating current through said second LED array in response to the alternating
voltage having the second polarity.

July 27, 2004

Case No.: US010726 (7790/69)

Serial No.: 10/037,490

Filed: December 28, 2001

Page 4 of 20

15. (Previously Presented) A device, comprising:
- a first LED array having a first anti-parallel configuration;
 - an inverter operable to provide an alternating voltage; and
 - a first resonant impedance circuit including a first resonant inductor and a first resonant capacitor array connected to said first LED array in a first series resonant, series loaded configuration having said first resonant inductor connected in series to said inverter, and said first resonant capacitor array connected in series between said first resonant inductor and said first LED array,

wherein said first resonant impedance circuit directs a first flow of a first alternating current through first LED array in response to the alternating voltage having a first polarity and directs a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity.

16. (Previously Presented) The device of claim 15, wherein said first LED array includes at least one of a LED pair, a LED string and a LED matrix.

17. (Previously Presented) The device of claim 15, wherein said first LED array includes a switch operable to control at least one of the first flow and the second flow of the first alternating current through said first LED array.

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 5 of 20

18. (Previously Presented) The device of claim 15,
further comprising a second LED array having a second anti-parallel
configuration;
wherein said first resonant impedance circuit further includes a second
resonant capacitor array;
wherein said first resonant inductor and said second resonant capacitor array
are connected to said second LED array in a second series resonant, series loaded
configuration having said first resonant inductor connected in series to said inverter,
and said second resonant capacitor array connected in series between said first
resonant inductor and said second LED array; and
wherein said first resonant impedance circuit directs a third flow of a second
alternating current through said second LED array in response to the alternating
voltage having the first polarity and directs a fourth flow of the second alternating
current through said second LED array in response to the alternating voltage having
the second polarity.
19. (Previously Presented) The device of claim 18,
wherein said first LED array includes a first switch operable to control at least
one of the first flow and the second flow of the first alternating current through said
first LED array; and
wherein said second LED array includes a second switch operable to control at
least one of the third flow and the fourth flow of the second alternating current
through said second LED array.

July 27, 2004

Case No.: US010726 (7790/69)

Serial No.: 10/037,490

Filed: December 28, 2001

Page 6 of 20

20. (Previously Presented) The device of claim 15, further comprising:
a second LED array having a second anti-parallel configuration; and
a second resonant impedance circuit including a second resonant inductor and
a second resonant capacitor array connected to said second LED array in a second
series resonant, series loaded configuration having said second resonant inductor
connected in series to said inverter, and said second resonant capacitor array
connected in series between said second resonant inductor and said second LED
array,

wherein said second resonant impedance circuit directs a third flow of
a second alternating current through said second LED array in response to the
alternating voltage having the first polarity and directs a fourth flow of the second
alternating current through said second LED array in response to the alternating
voltage having the second polarity.

21. (Previously Presented) The device of claim 20,
wherein said first LED array includes a first switch operable to control at least
one of the first flow and the second flow of the first alternating current through said
first LED array; and
wherein said second LED array includes a second switch operable to control at
least one of the third flow and the fourth flow of the second alternating current
through said second LED array.

July 27, 2004

Case No.: US010726 (7790/69)

Serial No.: 10/037,490

Filed: December 28, 2001

Page 7 of 20

22. (Currently Amended) A device, comprising:
- a first LED array having a first anti-parallel configuration;
 - an inverter operable to provide an alternating voltage; and
 - a first resonant impedance circuit connected to said first LED array in a first series resonant, series loaded configuration having said first resonant impedance circuit connected in series between said inverter and said first LED array,
- wherein the series connection of said first resonant impedance circuit and said first LED array is exclusive to said first resonant impedance circuit and said first LED array, and

wherein said first resonant impedance circuit includes means for directing a first flow of a first alternating current through said first LED array in response to the alternating voltage having a first polarity and directing a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity.

23. (Previously Presented) The device of claim 22, wherein said first LED array includes at least one of a LED pair, a LED string and a LED matrix.

24. (Previously Presented) The device of claim 22, wherein said first LED array includes a switch operable to control at least one of the first flow and the second flow of the first alternating current through said first LED array.

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 8 of 20

25 (Previously Presented) The device of claim 22,
further comprising a second LED array having a second anti-parallel
configuration;

wherein said first resonant impedance circuit is connected to said second LED
array in a second series resonant, series loaded configuration having said first
resonant impedance circuit connected in series between said inverter and said second
LED array; and

wherein said first resonant impedance circuit includes means for directing a
third flow of a second alternating current through said second LED array in response
to the alternating voltage having the first polarity and directing a fourth flow of the
second alternating current through said second LED array in response to the
alternating voltage having the second polarity.

26. (Previously Presented) The device of claim 25,

wherein said first LED array includes a first switch operable to control at least
one of the first flow and the second flow of the first alternating current through said
first LED array; and

wherein said second LED array includes a second switch operable to control at
least one of the third flow and the fourth flow of the second alternating current
through said second LED array.

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 9 of 20

27. (Previously Presented) The device of claim 22, further comprising:
a second LED array having a second anti-parallel configuration; and
a second resonant impedance circuit connected to said second LED array in a second series resonant, series loaded configuration having said second resonant impedance circuit connected in series between said inverter and said second LED array,
wherein said second resonant impedance circuit includes means for directing third flow of a second alternating current through said second LED array in response to the alternating voltage having the first polarity and directing a fourth flow of the second alternating current through said second LED array in response to the alternating voltage having the second polarity
28. (Previously Presented) The device of claim 27,
wherein said first LED array includes a first switch operable to control at least one of the first flow and the second flow of the first alternating current through said first LED array; and
wherein said second LED array includes a second switch operable to control at least one of the third flow and the fourth flow of the second alternating current through said second LED array.

July 27, 2004

Case No.: US010726 (7790/69)

Serial No.: 10/037,490

Filed: December 28, 2001

Page 10 of 20

29. (Currently Amended) A device, comprising:
at least one LED array, each LED array having an anti-parallel configuration;
an inverter means for providing an alternating voltage; and
a resonant impedance means connected to each LED array in a series resonant, series loaded configuration having said resonant impedance means connected in series between said inverter and each LED array, said resonant impedance means for directing a first flow of a first alternating current through said at least one LED array in response to the alternating voltage having a first polarity and directing a second flow of the first alternating current through said at least one LED array in response to the alternating voltage having a second polarity.

wherein said series connection of said resonant impedance means and a first LED array of the at least one LED array is exclusive to said resonant impedance means and said first LED array.

30. (Previously Presented) The device of claim 29, wherein said at least one LED array includes switching means for controlling at least one of the first flow and the second flow of the first alternating current through said at least one LED array.

31. (New) A device, comprising:
a first LED array having a first anti-parallel configuration;
an inverter operable to provide an alternating voltage;
a first resonant impedance circuit including a first resonant inductor and a first resonant capacitor connected to said first LED array in a first series resonant, series loaded configuration having said first resonant inductor connected in series to said inverter, and said first resonant capacitor connected in series between said first resonant inductor and said first LED array,

wherein said first resonant impedance circuit directs a first flow of a first alternating current through said first LED array in response to the alternating voltage having a first polarity and directs a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity; and

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 11 of 20

a second LED array having a second anti-parallel configuration,
wherein said first resonant impedance circuit further includes a second resonant capacitor,

wherein said first resonant inductor and said second resonant capacitor are connected to said second LED array in a second series resonant, series loaded configuration having said first resonant inductor connected in series to said inverter, and said second resonant capacitor connected in series between said first resonant inductor and said second LED array, and

wherein said first resonant impedance circuit directs a third flow of a second alternating current through said second LED array in response to the alternating voltage having the first polarity and directs a fourth flow of the second alternating current through said second LED array in response to the alternating voltage having the second polarity.

32. (New) A device, comprising:

a first LED array having a first anti-parallel configuration;
an inverter operable to provide an alternating voltage;

a first resonant impedance circuit including a first resonant inductor and a first resonant capacitor connected to said first LED array in a first series resonant, series loaded configuration having said first resonant inductor connected in series to said inverter, and said first resonant capacitor connected in series between said first resonant inductor and said first LED array,

wherein said first resonant impedance circuit directs a first flow of a first alternating current through said first LED array in response to the alternating voltage having a first polarity and directs a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity;

a second LED array having a second anti-parallel configuration; and

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 12 of 20

a second resonant impedance circuit including a second resonant inductor and a second resonant capacitor connected to said second LED array in a second series resonant, series loaded configuration having said second resonant inductor connected in series to said inverter, and said second resonant capacitor connected in series between said second resonant inductor and said second LED array,

wherein said second resonant impedance circuit directs a third flow of a second alternating current through said second LED array in response to the alternating voltage having the first polarity and directs a fourth flow of the second alternating current through said second LED array in response to the alternating voltage having the second polarity.

33. (New) A device, comprising:

a first LED array having a first anti-parallel configuration;

an inverter operable to provide an alternating voltage; and

a first resonant impedance circuit connected to said first LED array in a first series resonant, series loaded configuration having said first resonant impedance circuit connected in series between said inverter and said first LED array,

wherein said first resonant impedance circuit includes means for directing a first flow of a first alternating current through said first LED array in response to the alternating voltage having a first polarity and directing a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity; and

a second LED array having a second anti-parallel configuration,

wherein said first resonant impedance circuit is connected to said second LED array in a second series resonant, series loaded configuration having said first resonant impedance circuit connected in series between said inverter and said second LED array, and

July 27, 2004
Case No.: US010726 (7790/69)
Serial No.: 10/037,490
Filed: December 28, 2001
Page 13 of 20

wherein said first resonant impedance circuit includes means for directing a third flow of a second alternating current through said second LED array in response to the alternating voltage having the first polarity and directing a fourth flow of the second alternating current through said second LED array in response to the alternating voltage having the second polarity.

34. (New) The device of claim 33, wherein said first LED array includes a first switch operable to control at least one of the first flow and the second flow of the first alternating current through said first LED array.

35. (New) The device of claim 34, wherein said second LED array includes a second switch operable to control at least one of the third flow and the fourth flow of the second alternating current through said second LED array.

36. (New) A device, comprising:

a first LED array having a first anti-parallel configuration;

an inverter operable to provide an alternating voltage; and

a first resonant impedance circuit connected to said first LED array in a first series resonant, series loaded configuration having said first resonant impedance circuit connected in series between said inverter and said first LED array,

wherein said first resonant impedance circuit includes means for directing a first flow of a first alternating current through said first LED array in response to the alternating voltage having a first polarity and directing a second flow of the first alternating current through said first LED array in response to the alternating voltage having a second polarity;

a second LED array having a second anti-parallel configuration; and

a second resonant impedance circuit connected to said second LED array in a second series resonant, series loaded configuration having said second resonant impedance circuit connected in series between said inverter and said second LED array,

July 27, 2004

Case No.: US010726 (7790/69)

Serial No.: 10/037,490

Filed: December 28, 2001

Page 14 of 20

wherein said second resonant impedance circuit includes means for directing third flow of a second alternating current through said second LED array in response to the alternating voltage having the first polarity and directing a fourth flow of the second alternating current through said second LED array in response to the alternating voltage having the second polarity.

37 (New) The device of claim 36, wherein said first LED array includes a first switch operable to control at least one of the first flow and the second flow of the first alternating current through said first LED array.

38. (New) The device of claim 37, wherein said second LED array includes a second switch operable to control at least one of the third flow and the fourth flow of the second alternating current through said second LED array.